The Battle of Neighborhoods

New York: The City of Pizza

PRESENTATION

Introduction

Although pizza originated in Naples, Italy many people associate the cosmopolitan metropolis of New York City with the dish. It is likely the case that the modern day version of New York style pizza was created by Italian immigrants in New York City at the turn of the 20th Century.

In a city known for its availability of high-quality and cheap pizza shops, we are curious to know more about neighborhood differences in pizza availability throughout the city.

Business Problem

If tourists wanted to sample local versions of pizza when visiting New York City what neighborhoods would be most efficient for trying different local shops?

Is it possible to use data to identify which neighborhoods offer the greatest availability of pizza?

It is likely the case that a tourist would be primarily concerned with the density of pizza shops in a convenient area, ideally pizza shops that are well reviewed.
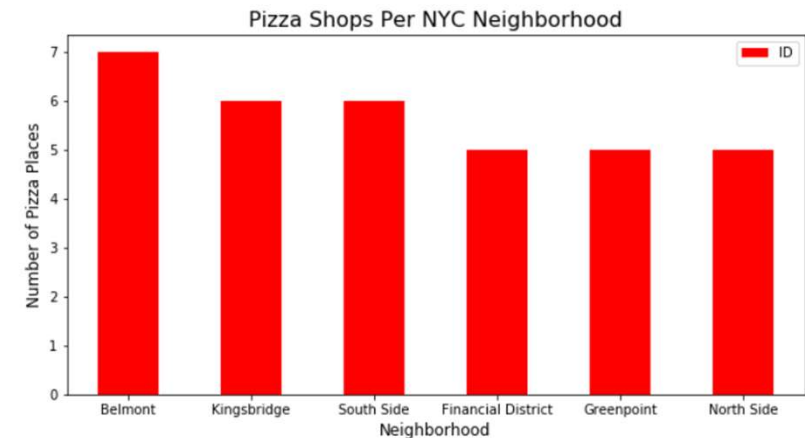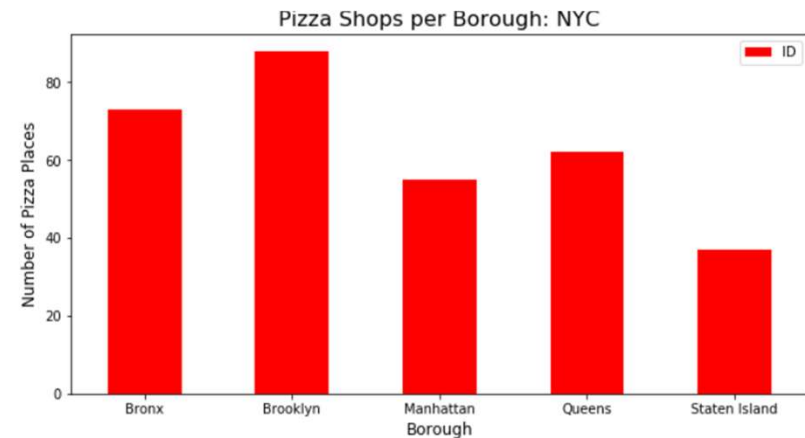
Data

In order to use data science methodologies to identify the frequency of pizza shops by neighborhood several key pieces of data are required:

— Geographic data on neighborhoods of New York City (https://geo.nyu.edu/catalog/nyu_2451_34572)

— Data on existing restaurant and food service establishments in New York City (Foursquare API)

— Latitudinal and Longitudinal values for New York City (Geocoder)

Using this information neighborhood differences in the availability of pizza restaurants can be determined.

Methodology

— First steps included performing data analysis to understand data. This included understanding
  — The number of neighborhoods per borough of New York City
  — The number of pizza shops per borough;
  — And the neighborhoods with the highest density of pizza shops

— These steps were designed to follow the interests of tourists looking for pizza, tourists will be primarily concerned with the neighborhoods with greatest concentration of pizza shops

Methodology (cont.)

— After confirming which neighborhoods included the highest density of pizza shops a tourist would be concerned with the quality of the establishments.

— Using publicly available data sources average user review scores were obtained for all pizza shops in the most pizza-shop dense neighborhoods. Average shop review scores were then obtained.

— Although two neighborhoods in Bronx include a high density of pizza shops, South Side in Brooklyn has higher average reviews per shop.

Neighborhood	Borough	Avg. Rating (out of 10)
South Side	Brooklyn	9.1
Belmont	Bronx	8.6
Kingsbridge	Bronx	7.5

Discussion

— It is important to remember that each tourist will have his or her own preferences.

— However, it is evident that neighborhoods in Bronx and Brooklyn would be most likely to attract tourists looking for pizza in New York City.

— There are likely also to be other establishments selling pizza in New York City who do not primarily focus on pizza.

Conclusion

— With the large number of total pizza shops in New York City it may be difficult to not find one as a tourist.

— However, it is clear that for efficient quality pizza eating the South Side neighborhood of Brooklyn offers the tightest group of quality pizza in the city. As evidenced by the number of shops close together and the consistent quality across options.

Neighborhood	Borough	# Shops	Avg. Rating	Rating St. Dev.
South Side	Brooklyn	6	9.1	0.41
Belmont	Bronx	7	8.6	1.07
Kingsbridge	Bronx	6	7.5	1.67